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AMENDMENTS

IN THE CLAIMS

- 1 1. (Currently amended) A system for updating electronic files comprising:
2 a first device for generating a difference files that includeincludes coded
3 differences between an original version and a new version of an electronic file, wherein
4 the first device includes at least one component ~~that reduces a size of the difference file~~
5 by configured for:
6 identifying differences between the original version and the new versions
7 corresponding to address shifts resulting from at least one of code line deletion,
8 code line addition, and code line modification;
9 removing the identified differences in text sections common to the original
10 version and the new versions by modifying target addresses of instructions of the
11 original version using at least one relationship between addresses of text sections
12 of the original version and corresponding text sections of the new version;
13 generating a modified version of the original ~~file~~version that includes the
14 instructions having modified target addresses; and
15 generating the difference file using the new version and the modified
16 version of the original version; and
17 a second device that receives the difference file and generates a the new version
18 ~~of the new file~~ in the second device using the difference file.
- 1 2. (Currently amended) The system of claim 1, wherein removing further includes:
2 identifying first and second text sections that are common between the original
3 version and the new versions, wherein the first text section in the original version
4 includes a first calculable instruction and the second text section in the new version
5 includes a second calculable instruction;

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6 identifying third and fourth text sections that are common between the original
7 version and the new versions, wherein the third text section in the original version
8 includes a first target address that corresponds to the first calculable instruction, wherein
9 the fourth text section in the new version includes a second target address that
10 corresponds to the second calculable instruction;
11 generating a second instruction value from the second calculable instruction by
12 modifying the first instruction value using a first difference between starting addresses of
13 the third and fourth function units and using a second difference between starting
14 addresses of the first and second function units; and
15 replacing a first instruction value of the first calculable instruction with the second
16 instruction value.

1 3. (Currently amended) The system of claim 1, further comprising removing the
2 identified differences in instructions including data pointers that point to data sections
3 common to the original version and the new versions by modifying data pointer values in
4 the original version, wherein modifying data pointer values uses a difference between
5 starting addresses of data sections in the original version pointed to by a current data
6 pointer and starting addresses of corresponding data sections in the new version.

1 4. (Currently amended) The system of claim 3, wherein removing identified
2 differences in instructions including data pointers further comprises:
3 identifying first and second code segments that are common between the original
4 version and the new versions, wherein the first code segment in the original version
5 includes a first data pointer and the second code segment in the new version includes a
6 second data pointer;
7 identifying first and second data units that are common between the original
8 version and the new versions, wherein the first data unit in the original version includes a
9 first target address that corresponds to the first data pointer, wherein the second data unit

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10 in the new version includes a second target address that corresponds to the second data
11 pointer;
12 generating a second data pointer value from the second data pointer by modifying
13 a first data pointer value using a difference between starting addresses of the first and
14 second data units; and
15 replacing a first data pointer value of the first data pointer with the second data
16 pointer value.

1 5. (Original) The system of claim 1, wherein the second device is at least one
2 processor-based device selected from among personal computers, portable computing
3 devices, cellular telephones, portable communication devices, and personal digital
4 assistants.

1 6. (Original) The system of claim 1, wherein the first device transfers the
2 difference file to the second device using at least one coupling, wherein the at least one
3 coupling is at least one of a wireless coupling, a wired coupling, and a hybrid
4 wireless/wired coupling.

1 7. (Currently amended) An apparatus for use in generating a difference files,
2 comprising:
3 means for receiving an original version and a new version of an electronic file;
4 means for identifying units of code that are common to the original version and
5 the new versions;
6 means for identifying instructions that are common to the units of code, wherein
7 the instructions include instruction values that direct processing to another portion of the
8 corresponding file;
9 means for generating a first instruction value from a first instruction of the
10 original version;

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11 means for generating a second instruction value from a second instruction of the
12 new version, wherein the second instruction corresponds to the first instruction;
13 means for replacing the first instruction value of the first instruction with the
14 second instruction value; and
15 means for generating a modified version of the original fileversion comprising the
16 first instruction with the second instruction value; and
17 means for generating the difference file using the new version and the modified
18 version of the original version.

1 8. (Currently amended) A method for reducing a size of a difference file that
2 includes coded differences between an original version and a new version of an electronic
3 file, comprising:
4 identifying differences between the original version and the new versions
5 corresponding to address shifts resulting from at least one of code line deletion, code line
6 addition, and code line modification;
7 removing the identified differences in text sections common to the original
8 version and the new versions by modifying target addresses of instructions of the original
9 version using at least one relationship between addresses of text sections of the original
10 version and corresponding text sections of the new version; and
11 generating a modified version of the original fileversion that includes the
12 instructions having modified target addresses; and
13 generating the difference file using the new version and the modified version of
14 the original version.

1 9. (Currently amended) The method of claim 8, wherein removing further includes:
2 identifying first and second text sections that are common between the original
3 version and the new versions, wherein the first text section in the original version
4 includes a first calculable instruction and the second text section in the new version
5 includes a second calculable instruction;

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6 identifying third and fourth text sections that are common between the original
7 version and the new versions, wherein the third text section in the original version
8 includes a first target address that corresponds to the first calculable instruction, wherein
9 the fourth text section in the new version includes a second target address that
10 corresponds to the second calculable instruction;
11 generating a second instruction value from the second calculable instruction by
12 modifying the first instruction value using a first difference between starting addresses of
13 the third and fourth function units and using a second difference between starting
14 addresses of the first and second function units; and
15 replacing a first instruction value of the first calculable instruction with the second
16 instruction value.

1 10. (Currently amended) The method of claim 8, further comprising removing the
2 identified differences in instructions including data pointers that point to data sections
3 common to the original version and the new versions by modifying data pointer values in
4 the original version, wherein modifying data pointer values uses a difference between
5 starting addresses of data sections in the original version pointed to by a current data
6 pointer and starting addresses of corresponding data sections in the new version.

1 11. (Currently amended) The method of claim 10, wherein removing identified
2 differences in instructions including data pointers further comprises:
3 identifying first and second code segments that are common between the original
4 version and the new versions, wherein the first code segment in the original version
5 includes a first data pointer and the second code segment in the new version includes a
6 second data pointer;
7 identifying first and second data units that are common between the original
8 version and the new versions, wherein the first data unit in the original version includes a
9 first target address that corresponds to the first data pointer, wherein the second data unit

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10 in the new version includes a second target address that corresponds to the second data
11 pointer;
12 generating a second data pointer value from the second data pointer; and
13 replacing a first data pointer value of the first data pointer with the second data
14 pointer value.

1 12. (Original) The method of claim 11, wherein generating the second data
2 pointer value includes modifying a first data pointer value using a difference between
3 starting addresses of the first and second data units.

1 13. (Currently amended) The method of claim 10, further comprising generating a
2 modified version of the original fileversion that includes the instructions having modified
3 data pointers.

1 14. (Original) The method of claim 10, further comprising merging common data
2 units to form common data blocks.

1 15. (Original) The method of claim 14, wherein merging comprises:
2 combining first and second data units of the original version and combining
3 corresponding first and second data units of the new version to form a common data
4 block when the first data unit of the original version has a size equal to the first data unit
5 of the new version, an ending address of the first data unit of the original version is equal
6 to a starting address of the second data unit of the original version, and an ending address
7 of the first data unit of the new version is equal to a starting address of the second data
8 unit of the new version; and
9 repeating the combining operation for additional mergeable data units.

1 16. (Original) The method of claim 15, further comprising merging common text
2 sections to form common function blocks.

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- 1 17. (Original) The method of claim 16, wherein merging comprises:
2 combining first and second text sections of the original version and combining
3 corresponding first and second text sections of the new version to form a common
4 function block when the first text section of the original version has a size equal to the
5 first text section of the new version, an ending address of the first text section of the
6 original version is equal to a starting address of the second text section of the original
7 version, and an ending address of the first text section of the new version is equal to a
8 starting address of the second text section of the new version; and
9 repeating the combining operation for additional mergeable text sections.
- 1 18. (Currently amended) A method for performing file differencing, comprising:
2 receiving an original version and a new version of an electronic file;
3 identifying units of code that are common to the original version and the new
4 versions;
5 identifying instructions that are common to the units of code, wherein the
6 instructions include instruction values that relate to another portion of the corresponding
7 file;
8 decoding a first instruction value from a first instruction of the original version;
9 generating a second instruction value from a second instruction of the new
10 version, wherein the second instruction corresponds to the first instruction;
11 replacing the first instruction value of the first instruction with the second
12 instruction value; and
13 generating a modified version of the original ~~file~~version comprising the first
14 instruction with the second instruction value; and
15 performing file differencing between the new version and the modified version of
16 the original version and generating a difference file.

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1 19. (Original) The method of claim 18, further comprising extracting the
2 common units of code from associated map files, wherein the common units of code
3 include common function units and common data units.

1 20. (Original) The method of claim 18, further comprising merging common
2 function units of the units of code to form common function blocks.

1 21. (Original) The method of claim 20, wherein merging comprises:
2 combining first and second function units of the original version and combining
3 corresponding first and second function units of the new version to form a common
4 function block when the first function unit of the original version has a size equal to the
5 first function unit of the new version, an ending address of the first function unit of the
6 original version is equal to a starting address of the second function unit of the original
7 version, and an ending address of the first function unit of the new version is equal to a
8 starting address of the second function unit of the new version; and
9 repeating the combining operation for additional mergeable function units.

1 22. (Original) The method of claim 20, further comprising encoding the common
2 function blocks.

1 23. (Original) The method of claim 18, further comprising merging common data
2 units of the units of code to form common data blocks.

1 24. (Original) The method of claim 23, wherein merging comprises:
2 combining first and second data units of the original version and combining
3 corresponding first and second data units of the new version to form a common data
4 block when the first data unit of the original version has a size equal to the first data unit
5 of the new version, an ending address of the first data unit of the original version is equal
6 to a starting address of the second data unit of the original version, and an ending address

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7 of the first data unit of the new version is equal to a starting address of the second data
8 unit of the new version; and
9 repeating the combining operation for additional mergeable data units.

1 25. (Original) The method of claim 23, further comprising encoding the common
2 data blocks.

1 26. (Currently amended) The method of claim 18, wherein the units of code that are
2 common to the original version and the new versions are common function units, wherein
3 the first instruction includes a first calculable instruction and the second instruction
4 includes a second calculable instruction, wherein generating the second instruction value
5 includes modifying the first instruction value using a first difference between starting
6 addresses of the common function units of the original version and the new versions that
7 include a target address and using a second difference between the starting addresses of
8 the common function units that include the first and second calculable instructions.

1 27. (Original) The method of claim 18, wherein the units of code include function
2 units.

1 28. (Original) The method of claim 27, wherein generating the first instruction
2 value includes generating a difference between a current instruction address of the first
3 calculable instruction and a target address of the first calculable instruction.

1 29. (Original) The method of claim 27, wherein generating the second instruction
2 value includes:
3 generating a difference between a current instruction address of the first
4 calculable instruction and a target address of the first calculable instruction;

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5 generating a difference between a start address of a first common function unit of
6 the new version and a start address of a corresponding first common function unit of the
7 original version; and
8 generating a difference between a start address of a second common function unit
9 of the new version and a start address of a corresponding second common function unit
10 of the original version.

1 30. (Original) The method of claim 18, wherein the units of code include data
2 units and the instructions include data pointers.

1 31. (Currently amended) The method of claim 18, wherein the units of code that are
2 common to the original version and the new versions are common data units, wherein the
3 first instruction includes a first data pointer and the second instruction includes a second
4 data pointer, wherein the first instruction value includes a first data pointer value and the
5 second instruction value includes a second data pointer value, wherein generating the
6 second instruction value includes generating a second data pointer value by modifying
7 the first data pointer value using a difference between starting addresses of the first and
8 second data units.

1 Claim 32 (canceled).

1 33. (Currently amended) The method of claim ~~32~~18, further comprising:
2 transferring the difference file to a portable processing system; and
3 generating a version of the new fileversion in the portable processing system
4 using the difference file.

1 34. (Currently amended) The method of claim 33, further comprising:
2 merging common function units of the units of code to form common function
3 blocks;

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4 merging common data units of the units of code to form common data blocks; and
5 encoding the common function blocks and the common data blocks for use in
6 generating the version of the new fileversion in the portable processing system.

1 35. (Currently amended) A method for determining differences between electronic
2 files, comprising:
3 receiving an original version and a new version of an electronic file;
4 identifying first and second function units that are common between the original
5 version and the new versions, wherein the first function unit in the original version
6 includes a first calculable instruction and the second function unit in the new version
7 includes a second calculable instruction;
8 identifying third and fourth function units that are common between the original
9 version and the new versions, wherein the third function unit in the original version
10 includes a first target address that corresponds to the first calculable instruction, wherein
11 the fourth function unit in the new version includes a second target address that
12 corresponds to the second calculable instruction;
13 generating a second instruction value from the second calculable instruction;
14 replacing a first instruction value of the first calculable instruction with the second
15 instruction value; and
16 generating a modified version of the original fileversion comprising the first
17 instruction with the second instruction value; and
18 generating a difference file using the new version and the modified version of the
19 original version, the difference file including the differences.

1 36. (Original) The method of claim 35, wherein generating the second instruction
2 value includes modifying the first instruction value using a first difference between
3 starting addresses of the third and fourth function units and using a second difference
4 between starting addresses of the first and second function units.

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1 37. (Currently amended) The method of claim 35, further comprising:
2 identifying first and second code segments that are common between the original
3 version and the new versions, wherein the first code segment in the original version
4 includes a first data pointer and the second code segment in the new version includes a
5 second data pointer;
6 identifying first and second data units that are common between the original
7 version and the new versions, wherein the first data unit in the original version includes a
8 first target address that corresponds to the first data pointer, wherein the second data unit
9 in the new version includes a second target address that corresponds to the second data
10 pointer;
11 generating a second data pointer value from the second data pointer;
12 replacing a first data pointer value of the first data pointer with the second data
13 pointer value; and
14 generating a modified version of the original fileversion comprising the first data
15 pointer with the second data pointer value.

1 38. (Original) The method of claim 37, wherein generating the second data
2 pointer value includes generating a difference between starting addresses of data sections
3 in the original version pointed to by a current data pointer and starting addresses of
4 corresponding data sections in the new version.

1 39. (Original) The method of claim 35, further comprising merging common
2 function units to form common function blocks.

1 40. (Original) The method of claim 35, further comprising merging common data
2 units to form common data blocks.

1 Claim 41 (canceled).

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1 42. (Currently amended) The method of claim 41~~35~~, further comprising:
2 transferring the difference file to a portable processing system; and
3 generating a version of the new fileversion in the portable processing system
4 using the difference file.

1 43. (Currently amended) A computer readable medium including executable
2 instructions which, when executed in a processing system, reduce a size of a difference
3 file that includes coded differences between an original version and a new version of an
4 electronic file by:
5 identifying differences between the original version and the new versions
6 corresponding to address shifts resulting from at least one of code line deletion, code line
7 addition, and code line modification;
8 removing the identified differences in text sections common to the original
9 version and the new versions by modifying target addresses of instructions of the original
10 version using at least one relationship between addresses of text sections of the original
11 version and corresponding text sections of the new version; and
12 generating a modified version of the original fileversion that includes the
13 instructions having modified target addresses; and
14 generating the difference file using the new version and the modified version of
15 the original version.